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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/613,759	07/11/2000	Erez N. Ribak	00/20096	9837

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EXAMINER

GONZALEZ, JULIO C

ART UNIT PAPER NUMBER

2834

DATE MAILED: 11/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/613,759

Applicant(s)

RIBAK, EREZ N.

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) 29 and 31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al (Patent # 6,265,811) in view of Seefeldt et al and White.

Takeuchi discloses a piezoelectric device having a first porous element 22 connected to a second crystal element 18, an electrode 24a only connected to first element 22 (see figure 5B) such that electric potential of electrode results in strain induced of first element 22 on second element 18 (column 7, lines 1-4 & column 36, lines 5-9).

Although it is a matter of design choice to use certain materials, Takeuchi does not disclose that the first element is made up of silicon.

On the other hand, Seefeldt discloses for the purpose of accurately measuring low force changes, a piezoelectric device comprising a first silicon porous material 138, a second element made of crystal 62 attached to first element, and at least one electrode 114 being in electrical contact with first element (see

figure 25), such that subjecting first element to an electric potential results in strain induced (column 4, lines 54-58 and column 5, lines 53, 62, 63 and column 6, lines 3-7).

However, neither Tekeuchi nor Seefeldt disclose explicitly that silicon may be used to induced other elements.

On the other hand, White discloses for the purpose of providing devices that produce minimal electrical interferences that silicon may be used to induced other elements when a voltage is applied to silicon (see abstract & column 2, lines 48-55).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a piezoelectric device as disclosed by Takeuchi et al and to modify the invention by using certain material for the first element for the purpose of accurately measuring low force changes as disclosed by Seefeldt and to use silicon to induced other material for the purpose of providing devices that produce minimal electrical interferences as disclosed by White.

Response to Arguments

3. Applicant's arguments filed 08/22/02 have been fully considered but they are not persuasive.

Claim 1 discloses a “first element of porous crystalline silicon” and subjecting the first element to an electric potential via the electrodes results in a strain induced. The claim does not disclose that the silicon has piezoelectric properties. Also, by disclosing a “porous crystalline silicon”, the claim does not rule out any other silicon elements like silicon nitride, silicon dioxide. Respectfully, the claim does not disclose a pure silicon having piezoelectric properties. Instead, the claim may disclose other types of silicon that have piezoelectric properties, like a quartz, which is made of silicon dioxide. Moreover, the references used in the rejection like Takeuchi et al disclosed that a vibrating section 18 is made of silicon nitride (column 30, lines 48-51) and Seefeldt et al disclosed that a layer 150 may be made of silicon dioxide (column 6, lines 42, 43) and White disclosed that a surface 20, 24 is made of silicon nitride (column 4, line 58), which has piezoelectric properties.

4. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the main aspect of novelty and inventiveness of the present invention is that the porous crystalline silicon material, itself, is the sole component of the piezoelectric device wherein the piezoelectric properties, characteristics, and

behavior, are exhibited, without any direct or indirect operative interaction or contact) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

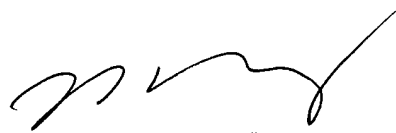
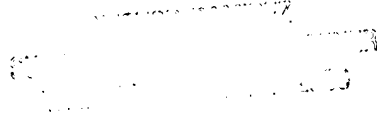
THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Jcg

November 19, 2002